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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,827	02/18/2004	Thomas Rezachek	H0004291	3746
<div><div>759001/30/2008</div><div>Kris Fredrick Honeywell International Inc. 101 Columbia Road - Patent Department Morristown, NJ 07962-2245</div></div>				
			<div>EXAMINER CREPEAU, JONATHAN</div>	
			<div>ART UNIT 1795</div>	<div>PAPER NUMBER</div>
			<div>MAIL DATE 01/30/2008</div>	<div>DELIVERY MODE PAPER</div>

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/780,827	<b>Applicant(s)</b> REZACHEK ET AL.	
	<b>Examiner</b> Jonathan S. Crepeau	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19,21-27,29 and 30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4,6-8,10,11,13,15-18 and 24-27 is/are allowed.
- 6) ☒ Claim(s) 5,9,12,14,19,21-23,29 and 30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action addresses claims 1-19, 21-27, 29, and 30 after entry of the amendment filed on January 15, 2008. Claims 1-4, 6-8, 10, 11, 13, 15-18, and 24-27 are allowed. However, claims 29 and 30 remain rejected for the reasons of record (Wood in view of Bostaph et al.), and claims 5, 9, 12, 14, 19, 21-23, 29 and 30 are subject to new grounds of rejection herein.

Accordingly, prosecution is reopened and this action is non-final.

### ***Priority***

2. The following analysis with respect to the filing dates of the claims is made herein: Claims 1-4, 6-8, 10, 11, 13, 15-18, and 24-27 are supported by 09/941,247 and are accorded a filing date of 8/28/01; claims 12, 14, 19, 21, 23, 29, and 30 are not supported by 09/941,247 but are supported by 60/448,573 and are accorded a filing date of 2/19/03; claims 5, 9 and 22 are not supported by either application and are accorded the filing date of the instant application, 2/18/04.

### ***Terminal Disclaimer***

3. The terminal disclaimers filed on January 15, 2008 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of Serial

Nos. 11/247,435 and 10/907,294 have been reviewed and are accepted. The terminal disclaimers have been recorded.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 12 is rejected under 35 U.S.C. 102(e) as being anticipated by Wood (2003/0044656 and 2006/0040152).

The Wood references teach all the limitations of claim 1 (see Fig. 2, for example).

Further, the references disclose, and thus anticipate, the following species recited in claim 12:

alkali metals, calcium hydride, lithium hydride, lithium aluminum hydride, and sodium

borohydride. The references do not teach the  $B_{10}H_{14}$  and lithium borohydride species. Since

these species are not disclosed in the manner required by 35 USC 112 first paragraph, the subject

matter of claim 12 is not supported by the references and thus is accorded a filing date of

2/19/03. It is well-settled that the subject matter of a claim must be *entirely* supported to be

granted the filing date of an earlier application. See MPEP 201.11(I)(B).

The applied references have a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, they constitute prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 14, 19, 21, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood (2003/0044656 and 2006/0040152).

The Wood references teach all the limitations of claim 1 (see Fig. 2, for example). However, the references do not expressly teach lithium borohydride as recited in claim 14, a mesopump as recited in claim 19, a mesovalve as recited in claim 21, that the valve is controlled by gas pressure within the power generator as recited in claim 22, or that the valve regulates gas pressure within the power generator as recited in claim 23.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because each of these features would be obvious from the disclosures of the Wood references, as explained below:

The recitation of lithium borohydride in claim 14 would be obvious based on the disclosure of “alkali metals” and the chemically similar material sodium borohydride.

The recitations of “mesopumps” and “mesovalves” would be obvious based on the small size of the apparatus of the Wood references. In the absence of a clear definition of these terms, they are interpreted as meaning relatively small pumps and valves.

The recitations that the valve regulates gas pressure within the power generator and that the valve is controlled by gas pressure within the power generator would also be obvious to a skilled artisan, since valves and associated control systems are commonly employed for automatically controlling pressure in systems comprising gas conduits.

The Wood references have a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, the Wood ‘656 reference constitutes prior art only under 35 U.S.C. 102(e) with regard to claims 14, 19, 21, and 23, and the Wood ‘152 reference constitutes prior art only under 35 U.S.C. 102(e) with regard to all of the rejected claims. This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention “by another”; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference

under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

However, it is noted that claim 22 has been accorded a filing date of 2/18/04. Thus, the Wood '656 reference, which was published 3/6/03, qualifies as prior art under 35 USC 102(a) and a statement of common ownership would not be sufficient to obviate the rejection of claim 22 over the Wood '656 reference.

8. Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood (2003/0044656 and 2006/0040152) in view of WO 01/85606.

The Wood references teach all the limitations of claim 1 (see Fig. 2, for example). However, the reference does not expressly teach that a mixture of alcohol and water is used to generate hydrogen as recited in claims 5 and 9.

WO '606 is directed to a method of hydrogen generation comprising reacting a metal hydride with at least one alcohol in the presence of water (see abstract).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated by the disclosure of WO '606 to add an alcohol to the reactant water supply of the Wood references. In the abstract, WO '606 teaches that the use of an alcohol "provide s a convenient, efficient method of generating hydrogen for a fuel cell." Accordingly, the artisan would be motivated by the disclosure of WO '606 to add an alcohol to the reactant water supply of the Wood references.

The Wood references have a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, the Wood '152 reference constitutes prior art only under 35 U.S.C. 102(e) with regard to the rejected claims. This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).



As stated above, claims 5 and 9 have been accorded a filing date of 2/18/04. It is noted that the Wood '656 reference, which was published 3/6/03, qualifies as prior art under 35 USC 102(a) against these claims and a statement of common ownership would not be sufficient to obviate the rejection over the Wood '656 reference.

9. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood (2003/0044656 and 2006/00440152) in view of Bostaph et al (U.S. Pre-Grant Publication No. 2002/0076589).

The Wood references teach all the limitations of claim 1 (see Fig. 2, for example). However, the Wood references do not expressly teach that the water vapor generator, hydrogen generator, fuel cell, and conduits are formed within a polymeric block, as recited in claim 29.

The Bostaph et al. reference is directed to a fuel cell system comprising components embedded in a polymer base portion (14) (see [0017]).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to embed the components of Wood in a polymer base portion. In [0009] Bostaph et al. teach the following:

**[0009] It is still a further purpose of the present invention to provide for a direct methanol fuel cell system and integrated sensor in which all of the system components are embedded inside a base portion, such as a ceramic base portion.**

Therefore, it is submitted that the artisan would be motivated to incorporate the components of Wood into a polymer base portion in order to provide a suitable housing/support for the components and reduce the size of the assembly. Further, the use the specific polymers recited in claim 30 would be obvious to the skilled artisan. For example, polycarbonate is a well-known material and provides advantages such as strength, toughness, and lightweightness. As such, the recitation of a polymeric material and the particular species of polymers are not considered to distinguish over the reference.

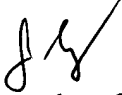
The Wood references have a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, they constitute prior art only under 35 U.S.C. 102(e) with regard to the rejected claims. This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention “by another”; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

*Conclusion*

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan, can be reached at (571) 272-1292. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jonathan Crepeau  
Primary Examiner  
Art Unit 1795  
January 25, 2008